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EXAMINER

MANOHARAN, MUTHUSWAMY GANAPATHY

ART UNIT	PAPER NUMBER
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2617

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11/29/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/804,263

Applicant(s)

PEKONEN ET AL.

Examiner

Muthuswamy G. Manoharan

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/5/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/20/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,3,4,6,15,17,20 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Chuah et al. (hereinafter Chuah) (US 7065359).

Regarding claim 1, Chuah teaches a method comprising:

(A) receiving a first channel burst from a first base station on a wireless channel, wherein the first base station serves the first cell and wherein the first channel burst supports a data service (Col. 5, lines 8-10);

(B) determining whether a serving signal quality associated with the first cell satisfies a handover criterion (Col. 5, lines 11-18);

(C) in response to (B), obtaining measurements associated with a list of candidate cells, wherein the list comprises at least one candidate cell and wherein each measurement gauges a corresponding signal quality that is provided by a

corresponding candidate cell (Col. 5, lines 19-23; "performs RF measurements and selects based on such measurements which BTS the AT 14 is to receive downlink data from", Col. 2, lines 60-63);

(D) if a selected signal quality is acceptable, deciding to perform the handover to a selected candidate cell, wherein the selected candidate cell is a member of the list and wherein the selected signal quality corresponds to the selected candidate cell (Col. 5, lines 24-35);

(E) after performing (D), receiving a final channel burst from the first base station (Col. 6, lines 1-2); and

(F) in response to (E), performing the handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station such that the handover occurs between the final channel burst and the new channel burst, wherein the selected candidate base station is serving the selected candidate cell (Col. 6, lines 5-17; Abstract; Note: Chuah teaches **TDMA system, col. 1, line 30**).

Regarding **claim 3**, Chuah teaches the method of claim 1, wherein the serving signal quality is determined from the first channel burst (Col. 5, lines 19-23).

Regarding **claim 4**, Chuah teaches, wherein the serving signal quality is selected from a group of indicators consisting of a received signal strength indicator (RSSI) value, a bit error rate (BER), a packet error rate (PER), and a frame error rate (FER) (Col. 5, lines 12-18).

Regarding **claim 6**, Chuah teaches, the method of claim 1, further comprising:
(G) determining the list of candidate cells (Col. 6, lines 37-44).

Claims 15 and 20 are rejected for the same reason as set forth in claim 1.

Regarding **claim 17**, Chuah further teaches the method of claim 1 further comprising serving a digital broadband broadcasting area and the data service is associated with a digital broadband broadcasting service (Col. 2, lines 1-20; Further this limitation is well known as admitted by the applicant (Paragraph [0002]).

Claim 25 is rejected for the same reason as set forth in claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Park et al. (hereinafter Park) (US 6154652).

Regarding **claim 2**, Chuah teaches all the particulars of claim, except the method, wherein (C) comprises: (i) obtaining the measurements cannot be completed before receiving the final channel burst from the first base station, suspending obtaining the measurements; (ii) receiving another channel burst from the first base station; and (iii) in response to (ii), resuming obtaining the measurements. However, Park teaches in an analogous art, wherein (C) comprises: (i) if obtaining the measurements cannot be completed before receiving the final channel burst from the first base station, suspending obtaining the measurements; (ii) receiving another channel burst from the first base station; and (iii) in response to (ii), resuming obtaining the measurements (Figure 2; Col. 5, lines 39-45; Col. 2, lines 19-67). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method wherein (C) comprises: (i) if obtaining the measurements cannot be completed before receiving the final channel burst from the first base station, suspending obtaining the measurements; (ii) receiving another channel burst from the first base station; and (iii) in response to (ii), resuming obtaining the measurements. This modification helps in improving the reliability of the handover process

Claims 5, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Jonsson (US 5513246).

Regarding **claims 5 and 21**, Chuah teaches all the particulars of the claim except, the method wherein (D) comprises: (i) adjusting the selected signal quality by a hysteresis value. However, Jonsson teaches in an analogous art, the method wherein (D) comprises: (i) adjusting the selected signal quality by a hysteresis value (Col. 11, lines 20-26). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method wherein (D) comprises: (i) adjusting the selected signal quality by a hysteresis value. This modification improves the network operating performance.

Regarding **claim 19**, Chuah teaches all the particulars of the claim except the method further comprising: (G) in response to (E), determining that the serving signal quality is not indicative of a handover; and (H) in response to (G), canceling the handover to the selected candidate cell. However, Jonsson teaches in an analogous art, the method further comprising: (G) in response to (E), determining that the serving signal quality is not indicative of a handover; and (H) in response to (G), canceling the handover to the selected candidate cell. Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method further comprising: (G) in response to (E), determining that the serving signal quality is not indicative of a

handover; and (H) in response to (G), canceling the handover to the selected candidate cell. This modification improves the reliability of the communications.

Claims 7-9,12-13 and 22,24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Chen et al. (hereinafter Chen) (US 6731936).

Regarding **claim 7**, Chuah teaches all the particulars of the claim except, wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises candidate information indicative of the list of candidate cells. However, Chen teaches in an analogous art, wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises candidate information indicative of the list of candidate cells (Col. 3, lines 12-18). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises candidate information indicative of the list of candidate cells. This list helps in speeding up the handover process.

Regarding **claims 8 and 22**, Chuah teaches all the particulars of the claim except the method, further comprising: (G) determining a phase shift offset that is associated with the selected candidate cell. However, Chen teaches in an analogous

art, the method, further comprising: (G) determining a phase shift offset that is associated with the selected candidate cell (Col. 3, lines 3-6). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method, further comprising: (G) determining a phase shift offset that is associated with the selected candidate cell. This modification helps in synchronization of the signal and thus speeding up the handover process.

Regarding **claim 9**, Chuah teaches all the particulars of the claim except the method wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises the phase shift offset that is associated with the selected candidate cell. However, Chen teaches in an analogous art, the method, wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises the phase shift offset that is associated with the selected candidate cell (Col. 3, lines 3-6). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method, wherein (G) comprises: (i) receiving handover information from the first base station, wherein the handover information comprises the phase shift offset that is associated with the selected candidate cell. This modification helps in synchronization of the signal and thus speeding up the handover process.

Regarding **claim 12 and 24**, Chuah teaches all the particulars of the claim except the method further comprising: (G) if a candidate signal quality is not

acceptable, removing the associated candidate from the list of candidate cells.

However, Chen teaches in an analogous art, (G) if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate cells (Col. 3, lines 54-67). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method wherein, (G) if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate cells. This modification helps to speed up the hand over process, since the mobile station does not have to check those base stations with insufficient signal strength.

Regarding **claim 13**, Chuah teaches all the particulars of the claim except the method wherein (F) comprises: (i) receiving the new channel burst associated with a different frequency. However, Chen teaches in an analogous art, the method wherein (F) comprises: (i) receiving the new channel burst associated with a different frequency (Col. 15, lines 10-25). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method wherein (F) comprises: (i) receiving the new channel burst associated with a different frequency. This modification avoids making the system so rigid by restricting to one particular frequency.

Claims 10,11,16,18,23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Nishiyama et al. (hereinafter Nishiyama) (US 2003/0162535)

Regarding **claim 10**, Chuah teaches all the particulars of the claim except the method, further comprising: (H) in response to (E), suspending reception on the wireless channel until performing (F). However, Nishiyama teaches in an analogous art the method, further comprising: (H) in response to (E), suspending reception on the wireless channel until performing (F) (Paragraph [0075], lines 6-12). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method, further comprising: (H) in response to (E), suspending reception on the wireless channel until performing (F) to reduce the power consumption of the mobile station.

Regarding **claims 11, and 23**, Chuah teaches all the particulars of the claim except the method, further comprising: (i) reducing power consumption of the wireless terminal. However, Nishiyama teaches in an analogous art the method, wherein (H) comprises: (i) reducing power consumption of the wireless terminal (Paragraph [0075], lines 6-12). Therefore, it would be obvious to one of ordinary skill in the art to use the method, wherein (H) comprises: (i) reducing power consumption of the wireless terminal. This limitation merely recites the reason for performing the method recited in claim 10.

Claim 16 is rejected for the same reason as set forth in claim 10.

Regarding **claim 18**, Chuah teaches all the particulars of the claim except the method, wherein a phase shift offset associated with the selected base station is not provided by the wireless system. However, Nishiyama teaches in an analogous art the method, wherein a phase shift offset associated with the selected base station is not provided by a same wireless system (table 1, Paragraph [0076]; the base station AP1

broadcasts the information related to the adjacent cells, Paragraph [0082]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the, wherein a phase shift offset associated with the selected base station is not provided by the wireless system and thus enable the mobile station to determine the phase shift offset in advance.

Claim 26 is rejected for the same reason as set forth in claim 11.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Bolgiano et al. (hereinafter Bolgiano) (US 6366568).

Regarding **claim 14**, Chuah teaches all the particulars of the claim except the method, wherein (F) comprises: (i) receiving the new channel burst associated with a different channelization code. However, Bolgiano teaches in an analogous art, the method, wherein (F) comprises: (i) receiving the new channel burst associated with a different channelization code (Col. 13, lines 17-25; Col. 15, lines 7-16). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method, wherein (F) comprises: (i) receiving the new channel burst associated with a different channelization code. This modification avoids making the system so rigid by restricting on particular channelization code.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (hereinafter Chuah) (US 7065359) in view of Jonsson (US 5513246) and further in view of Chen et al. (hereinafter Chen) (US 6731936).

Regarding claim 27, Chuah teaches a method for a wireless terminal performing a handover (title) from a first cell to another cell in a wireless system, comprising (Abstract):

(A) receiving a first channel burst from a first base station on a wireless channel, wherein the first base station serves the first cell and wherein the first channel burst supports a multicast service (Col. 5, lines 8-10);

(B), determining a list of candidate cells, wherein the list comprises at least one candidate cell (Col. 5, lines 19-23);

(C) determining whether a serving signal quality associated with the first cell satisfies a handover criterion (Col. 5, lines 11-18);

(D) obtaining measurements associated with a list of candidate cells, wherein the list comprises at least one candidate cell and wherein each measurement gauges a corresponding signal quality that is provided by a corresponding candidate cell (Col. 5, lines 19-23);

(G) if a selected signal quality is acceptable, deciding to perform the handover to a selected candidate cell, wherein the selected candidate cell is a member of the list and wherein the selected signal quality corresponds to the selected candidate cell (Col. 5, lines 24-40);

(H) after performing (G), receiving a final channel burst from the first base station (Col. 6, lines 1-2); and

(I) in response to (H), performing the handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station such that

the handover occurs between the final channel burst and the new channel burst, wherein the selected candidate base station is serving the selected candidate cell (Col. 6, lines 5-17) and wherein the new channel burst supports the multicast service (This method could be applicable to multicast service also; this limitation is adding additional use for the method rather than limiting the application to multicast).

Chuah did not teach specifically, the method of (i) adjusting the selected signal quality by a hysteresis value. However, Jonsson teaches in an analogous art, the method comprises: (i) adjusting the selected signal quality by a hysteresis value (Col. 11, lines 20-26). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method comprises: (i) adjusting the selected signal quality by a hysteresis value. This modification improves the network operating performance.

Neither Chuah nor Jonsson teaches the method further comprising: if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate cells. However, Chen teaches in an analogous art, a method comprising: if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate cells (Col. 3, lines 54-67). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the method comprising: if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate cells. This modification helps to speed up the hand over process, since the mobile station does not have to check those base stations with insufficient signal strength.

Response to Arguments

Applicant's arguments filed on 9/5/2007 have been fully considered but they are not persuasive.

Examiner fully disagrees with applicant's assertion on page 12 with the remarks, " The Applicants submit that Chuah does not disclose, teach, or suggest claim 1. Claim 1 includes, among other features, "if a selected signal quality is acceptable, deciding to perform the handover to a selected candidate cell, wherein the selected candidate cell is a member of the list and wherein the selected signal quality corresponds to the selected candidate cell." Chuah does not disclose this feature. Rather, Chuah discloses that when the wireless unit detects degradation in the airlink, the wireless unit may decide to switch from BTS 46 to BTS 50 based on the highest associated pilot signal power measurement. (Chuah, col. 5, ln. 12-23). Chuah, therefore, does not anticipate claim 1 on this basis"

Chuah further teaches in Col. 2, lines 40-45, "The AT14 maintains a list of BTSs 12a b referred to **as the active set** which includes the BTSs 12a b with which the AT14 is in communication and also in col. 5, lines 19-21, "The wireless unit can select the BTS 50 as the BTS in the active set of the wireless unit 42 with **the highest associated pilot signal** power measurements" and further in col.2, lines 54-56, "downlink channel quality is determined based on measurements of pilot signals transmitted from the BTSs 12a-b".

Therefore, it is apparent that Chuah teaches the limitation, " if a selected signal quality is acceptable, deciding to perform the handover to a selected candidate cell,

wherein the selected candidate cell is a member of the list ("**active set**") and wherein the selected signal quality corresponds to the selected candidate cell."

Al the limitations (A-D from claim 1) are notoriously well known in the art (3GPP documents could provide enough information regarding candidate cells).

Examiner respectfully disagrees with applicant's assertion on page 12 with the remarks," In addition claim 1 includes "(F) in response to (E), performing the handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station such that the handover occurs between the final channel burst and the new channel burst, wherein the selected candidate base station is serving the selected candidate cell."

Chuah does not disclose this feature. Rather, in Chuah before the wireless unit 42 receives packets from the new BTS 50, the wireless unit 42 waits for an indication that the BTS 50 is ready to transmit packets or waits until all data that has been forwarded to the old BTS 46 has been sent to the wireless unit 42. (Chuah, col. 5, ln. 41-46)".

Chuah also teaches TDMA (time division multiple access) (Col. 1, lines 30-31) system where data are transmitted periodically by a base station and therefore, the teachings of "channel burst" are inherent. Chuah teaches,"once a controller 6-0 has redirected the packets to the new BTS 50 and/or the data forwarded to the previous base station 46 has been sent to the wireless unit 42 (reads on **final channel burst** which is the last burst of data from the previous base station), the wireless communication system 40 signals the wireless unit 42 to begin receiving data (**reads on**

new channel burst which is the first burst of data from the new base station) from the new BTS 50".

Therefore, it is apparent that, Chuah teaches," "(F) in response to (E), performing the handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station such that the handover occurs between the final channel burst and the new channel burst, wherein the selected candidate base station is serving the selected candidate cell."

Examiner respectfully disagrees with the applicant's assertion on page 14 with the remarks, "Claim 25 includes, among other features, a handover analysis module: Chuah, therefore, does not anticipate claim 25 on this basis.

As explained earlier, Chuah teaches all the functionalities performed by the different modules. It is one of ordinary skill in the art to use a module for every functions performed by the system. Therefore, Chuah teaches the limitations of claim 25.

Examiner fully disagrees with applicant's assertion on Pages 16 and 17 with the remarks,"(I) in response to (H), performing handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station such that handover occurs between the final channel burst and the new channel burst, wherein the selected candidate base station is serving the selected cell and wherein the new channel burst supports the multicast service".

As discussed before, Chuah also teaches TDMA (time division multiple access) (Col. 1, lines 30-31) system where data are transmitted periodically by a base station and therefore, the teachings of "channel burst" are inherent. Therefore, handover (by

definition) occurs between a final channel burst and a new channel burst. Further the phrase "final channel burst supports the multicast service" is just adding additional use for the application.

Chuah teaches, "once a controller 6-0 has redirected the packets to the new BTS 50 and/or the data forwarded to the previous base station 46 has been sent to the wireless unit 42 (reads on final channel burst which is the last burst of data from the previous base station), the wireless communication system 40 signals the wireless unit 42 to begin receiving data (reads on new channel burst which is the first burst of data from the new base station) from the new BTS 50".

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Muthuswamy G. Manoharan whose telephone number is 571-272-5515. The examiner can normally be reached on 7:00AM-2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eng George can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


GEORGE ENG
SUPERVISORY PATENT EXAMINER